

CLAIMS

1. An arrangement having an electronically commutated external-rotor motor (20), which motor comprises an internal stator (22) that is arranged on a bearing tube (30) and is separated by a first air gap (24) from an external rotor (26; 92), which latter comprises a rotor cup (40) that is open at one end and is joined at its other end to a shaft (46) that is journaled in the bearing tube (30),

further having a permanent-magnet arrangement (76), arranged at the open end of the rotor cup (40), for interaction with a second permanent-magnet rotor (92) rotatably journaled in the arrangement, which permanent-magnet arrangement (76) is separated from that second rotor (92) by a second air gap and forms with it a magnetic coupling (94), so that a rotation of the permanent-magnet arrangement (76) brings about a rotation of that second rotor (92),

and having a non-ferromagnetic separating element (82) arranged in the second air gap, which element separates the second rotor (92) in liquid-tight fashion from the external-rotor motor (20), and on which element are arranged an arrangement (106) for journaling the second rotor (92), as well as the bearing tube (30) for journaling the shaft (46) of the rotor cup (40).

2. The arrangement according to claim 1,
wherein fan blades (64) are arranged on the external rotor (26).

3. The arrangement according to claim 2,
wherein the fan blades (64) are joined to the rotor cup (40) by plastic injection molding.

4. The arrangement according to any of the preceding claims,
wherein the permanent-magnet arrangement (76) arranged at the open end of the rotor cup (40) comprises plastic-matrix magnet material.

5. The arrangement according to claim 4,
wherein the plastic-matrix magnet material (76) is joined to the rotor cup (40) by plastic injection molding.

6. The arrangement according to claims 3 and 5, wherein the permanent-magnet arrangement (76) made of plastic-matrix magnet material, and the fan blades (64), are manufactured in successive process steps using the so-called 2K procedure.

7. The arrangement according to any of the preceding claims, wherein the non-ferromagnetic separating element (80, 82, 84) is manufactured from plastic.

8. The arrangement according to any of the preceding claims, wherein the non-ferromagnetic separating element (80, 82, 84) is approximately cup-shaped and has, on its side facing toward the external-rotor motor (20), no passage for liquid.

9. The arrangement according to any of the preceding claims, wherein fan blades (64) that, during operation, rotate within a fan housing (68) are arranged on the external rotor (26); and wherein the fan housing (68) is joined to the non-ferromagnetic separating element (80, 82, 84) via a plurality of struts (114, 116, 118).

10. The arrangement according to any of the preceding claims, wherein the non-ferromagnetic separating element (80, 82, 84) is joined in liquid-tight fashion, on its side facing away from the external-rotor motor (20), to a cover-like part (88).

11. The arrangement according to any of the preceding claims, wherein the second rotor (92) is joined to a pump element (90; 99).

12. The arrangement according to claim 11, wherein the second rotor (92) is implemented integrally with at least one part of the pump element (90; 99).

13. The arrangement according to any of the preceding claims, wherein a conveying wheel (90) of the pump is joined to a shaft which rotates during operation and with which a bearing tube is associated in order to journal it.

14. The arrangement according to any of the preceding claims, wherein the internal stator is sealed in fluid-tight fashion and is arranged in the fluid conveyed by the pump rotor (92), and is in direct interaction with the pump rotor (92) in order to drive it during operation.

15. The arrangement according to claim 14, wherein the pump rotor (92) is in interaction, via an air gap, with the fan wheel (64) in order to drive the latter during operation in the manner of a magnetic coupling.